NO.755



IN THE CLAIMS:

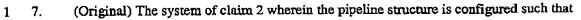
The following listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims:

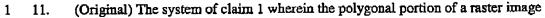
- 1 1. (Currently Amended) A system for identifying pixels inside a graphics primitive of a
- 2 raster image comprising:
- a memory for storing a raster image; and 3
- a graphics engine coupled to the memory and including comprising a pipeline structure 4
- configured for both sequential and parallel processing, the pipeline structure receiving 5
- information related to polygonal portions of the raster image from the memory and information б
- related to graphics primitives from a source for determining whether a polygonal portion of the 7
- raster image is at least partly inside the graphics primitive 8
- (Original) The system of claim 1 wherein the pipeline structure further comprises a 1
- predetermined number of sequential logic circuits and a predetermined number of parallel logic 2
- 3 circuits.
- (Original) The system of claim 1 wherein the pipeline structure divides the polygonal 1 3.
- portion into a predetermined number of polygonal subportions if the polygonal portion is at least 2
- partly inside the graphics primitive. 3
- (Original) The system of claim 1 wherein the pipeline structure determines whether the 1
- polygonal portion of the raster image is at least partly inside the graphics primitive by evaluation 2
- 3 of edge functions of the graphic primitive.
- (Original) The system of claim 4 wherein each edge function of the graphics primitive is 1 5.
- based on a general edge function, $e(x, y) = e_0 + n_x x + n_y y$ where e_0 is a constant, n_x is the x-2
- component of a normal vector n which is normal to an edge of the primitive and ny is the y-3.
- component of the normal vector n. 4
- (Original) The system of claim 4 wherein the edge function is evaluated at a corner 1 6.
- vertex of the polygonal portion, the corner vertex being farthest in a positive direction from a 2
- 3 primitive edge associated with the edge function.







- 2 the sequential logic circuits are coupled together in series followed by the parallel logic circuits
- 3 coupled together in parallel.
- 1 8. (Original) The system of claim 2 wherein the pipeline structure comprises seven
- 2 sequential logic circuits connect in series and seven parallel logic circuits coupled together in a
- 3 multi-stage pyramid structure.
- 1 9. (Original) The system of claim 3 wherein the pipeline structure determines the two
- 2 polygonal subportions by determining midpoint values of two opposite sides of the polygonal
- 3 portion of the raster image and using the midpoint values as vertices of the two polygonal
- 4 subportions.
- 1 10. (Original) The system of claim 1 wherein the pipeline structure further comprises a
- 2 predetermined number of pixel engines for determining attribute values associated with each
- 3 pixel.



- 2 has a width ΔX and a height ΔY , each of the width ΔX and the height ΔY having a
- 3 value of 2^m.
- 1 12. (Previously Presented) A method of identifying pixels inside a graphics primitive
- 2 of a raster image, comprising the steps of:
- 3 (a) determining whether a polygonal portion of the raster image is at least partly
- 4 inside the graphics primitive by using a coordinate reference frame located at a geometric
- 5 center of the polygonal portion;
- 6 (b) dividing the polygonal portion of the raster image into a predetermined
- 7 number of polygonal subportions if the polygonal portion of the raster image is at least
- 8 partly inside the graphics primitive;
- 9 (c) determining whether each polygonal subportion of the raster image is at least
- 10 partly inside the graphics primitive; and
- (d) further dividing the polygonal subportion into a predetermined number of
- 12 polygonal subportions if the polygonal subportion is at least partly inside the graphics
- 13 primitive and is larger than a pixel.





- 1 13. (Original) The method of claim 12 further comprising the step of recursively
- 2 performing (c) and (d) until there are no more polygonal subportions that are at least
- 3 partly inside the graphics primitive.
- 1 14. (Previously Presented) The method of claim 12, wherein the determining step (a)
- 2 further comprises the step of receiving a plurality of values for corner vertices of the
- 3 polygonal portion and arithmetic edge functions, each of the arithmetic edge functions
- 4 corresponding to an edge of the graphics primitive.
- 1 15. (Original) The method of claim 14, wherein the determining step (a) further comprises
- 2 the step of evaluating an arithmetic edge function received at a corner vertex of the polygonal
- 3 portion, the corner vertex being farthest in a positive direction relative to the corresponding edge
- 4 of the graphics primitive.
- 1 16. (Original) The method of claim 15 wherein the polygonal portion is at least partly inside
- 2 the graphics primitive if all arithmetic edge functions evaluated are positive.
- 1 17. (Original) The method of claim 12 wherein the dividing step (b) further comprises the
- 2 step dividing the polygonal portion into two polygonal subportions by determining midpoint
- 3 values of two opposite sides of the polygonal portion.
- 1 18. (Original) The method of claim 12 wherein the dividing step (b) further comprises the
- 2 step of sequentially deriving two new sets of arithmetic edge functions associated with a
- 3 translated coordinate reference frame located at a geometric center of a corresponding one of the
- 4 polygonal subportions.
- 1 19. (Original) The method of claim 12 wherein the dividing step (b) further comprises
- 2 the step of sequentially outputting multiple sets of information, wherein each set of
- 3 information includes corner vertices of one of the created polygonal subportions and a
- 4 corresponding new set of derived arithmetic edge functions.



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I	20.	(Previously Presented)	An electronically-readable me	edium having embodied
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- 2 thereon a program, the program being executable by a machine to perform method steps
- 3 for identifying pixels inside graphics primitives of a raster image, the method steps
- 4 comprising:
- 5 (a) determining whether a polygonal portion of the raster image is at least partly
- 6 inside the graphics primitive by using a coordinate reference frame located at a geometric
- 7 center of the polygonal portion;
- 8 (b) dividing the polygonal portion into a predetermined number of polygonal
- 9 subportions if the polygonal portion is at least partly inside the graphics primitive;
- (c) determining whether the polygonal subportion is at least partly inside the
 graphics primitive for each polygonal subportion; and
- 12 (d) dividing the polygonal subportion into a predetermined number of polygonal
- 13 subportions if the polygonal subportion is at least partly inside the graphics primitive and
- 14 the polygonal subportion is larger than a pixel.
 - 1 21. (Original) The electronically-readable medium of claim 20 further comprising the
 - 2 step of recursively performing steps (c) and (d) for each polygonal subportion larger than
 - 3 a pixel that is at least partly inside the graphics primitive.
 - 22. (Previously Presented) A method of identifying pixels inside a graphics primitive
 - 2 of a raster image comprising the steps of:
 - 3 selecting a tile including a pixel;
- 4 defining a coordinate reference frame located at a geometric center of the tile;
- 5 determining if a portion of the tile is within the graphics primitive;
- dividing the tile into subtiles if a portion of the tile is within the graphics
- 7 primitive; and
- 8 recursively dividing each subtile having a portion within the graphics primitive
- 9 until the subtile is equal in size to a pixel.
- 23. (Original) The method of claim 22 further comprising the step of disregarding the tile or
- 2 subtile from subsequent decomposition if the tile or subtile is outside of the graphics primitive.





- 1 24. (Original) The method of claim 22 wherein the step of determining further comprises
- 2 evaluating the tile at a corner vertex which is farthest in a positive direction relative to a current
- 3 edge of the graphics primitive.
- 1 25. (Original) The method of claim 22 wherein the step of recursively dividing further
- 2 comprises determining if the subtile is at least partly within the graphics primitive by
- 3 evaluating the subtile at a corner vertex which is farthest in a positive direction relative to
- 4 a current edge of the graphics primitive.



- 1 26. (Previously Presented) An electronically-readable medium having embodied
- 2 thereon a program, the program being executable by a machine to perform method steps
- 3 for identifying pixels inside graphics primitives of a raster image, the method steps
- 4 comprising:
- 5 selecting a tile including pixels;
- defining a coordinate reference frame located at a geometric center of the tile;
- determining if a portion of the tile is within the graphics primitive;
- 8 dividing the tile into subtiles if a portion of the tile is within the graphics
- 9 primitive; and
- 10 recursively dividing each subtile having a portion within the graphics primitive
- 11 until the subtile is equal in size to a pixel.